Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1 (currently amended): A method for recovering an absolute time in pre-groove (ATIP) clock and an ATIP signal from a wobble signal through a reference clock, the ATIP clock being synchronized with the ATIP signal and the reference clock comprising a plurality of reference periods, each of the reference periods having a fixed interval, the method comprising:

counting a number of reference periods of the reference clock occurring within a period of the wobble signal and generating a corresponding counting result;

generating an average number according to a long-term average of the counting results;

generating a wobble clock according to the average number and the reference clock;

generating the ATIP signal ~~according to~~ by comparing the average number and the counting result; and

generating the ATIP clock according to the ATIP signal and the wobble clock.

2 (original): The method of claim 1 wherein the wobble clock is generated by dividing the reference clock by the average number.

3 (original): The method of claim 1 wherein when generating the ATIP signal, a comparing result is first generated by comparing the counting result and the average number, and the ATIP signal is then generated by shaping a waveform of the comparing result through the wobble clock.

4 (original): The method of claim 3 wherein the ATIP signal comprises a first signal and a second signal, a duration of the first signal corresponds to an interval of the wobble

signal in which a number of reference periods is more than the average number, and a duration of the second signal corresponds to an interval of the wobble signal which has reference periods less than the average number.

5 (original): The method of claim 4 wherein the ATIP clock is generated according to a synchronization between the ATIP signal and the wobble signal.

6 (previously presented): A circuit for generating a wobble clock through a reference clock and a wobble signal, the reference clock comprising a plurality of reference periods, each of the reference periods having a fixed interval, the circuit comprising:
a counter for counting the wobble signal according to the reference clock;
a digital average processor connected to the counter for averaging an output of the counter to generate an average number;
a comparator for comparing the output of the counter with the average number so as to generate an ATIP signal; and
a divider for dividing the reference clock by the average number so as to generate the wobble clock.

7 (cancelled).

8 (previously presented): The circuit of claim 6 wherein the ATIP signal comprises a first signal and a second signal, a duration of the first signal corresponds to an interval of the wobble signal in which a number of reference periods is more than the average number, and a duration of the second signal corresponds to an interval of the wobble signal which has reference periods less than the average number.

9 (previously presented): The circuit of claim 6 further comprising a waveform shaping processor connected to the divider and the comparator for synchronizing the ATIP

signal with the wobble signal.

10 (original): The circuit of claim 6 further comprising a synchronization circuit for generating an ATIP clock synchronized with the ATIP signal through triggers of the wobble clock.

11 (original): The circuit of claim 10 wherein the synchronization circuit further comprises a status generator for generating a status signal according to a voltage level of the ATIP signal when triggered by the wobble signal; when the ATIP signal changes the voltage level, the status signal changes its status according to the ATIP signal when triggered by the wobble signal.

12 (original): The circuit of claim 11 wherein the synchronization circuit further comprises a period counter for counting a number of periods occurring within a period of the wobble signal according to the status signal so as to generate the ATIP clock.

13 (cancelled).